

# Environmental Product Declaration

In accordance with ISO 14025 and EN  
15804:2012+A2:2019

**[Partition Systems]**



EPD registration number:	S-P-04636
Publication date:	2021-10-25
Validity date:	2026-10-24
Geographical scope:	Worldwide

## 1. Introduction

Kubik India Pvt Limited (Kubik) is engaged in the supply, and installation of customized modular aluminium framed office partition systems & doors. Systems available in single glaze or double glaze. The company offer its clients a diversified & latest design products with high quality. Protecting the environment has always been the primary focus of Kubik since 2015.

Kubik has been designing and installing Partitions in some of the most prestigious architectural projects across India. Kubik has serviced a high-profile clientele that includes some of the biggest international brands and brings on board an unmatched reputation for innovation and excellence. The mission of Kubik is to serve their customers with innovative & futuristic products, providing **privacy, aesthetics, acoustics and value** to a workplace with compassion, dedication and honesty. This Environment Product Declaration (EPD) is for Office Partition Systems having 12 different configurations.

## 2. General Information

### 2.1 EPD, PCR, LCA Information

Table 1: EPD Information

Programme	The International EPD® System, Indian Regional Hub <a href="http://www.environdec.com">www.environdec.com</a> and <a href="http://www.environdecindia.com">www.environdecindia.com</a>
Program operator	EPD International AB Box 210 60, SE-100 31 Stockholm, Sweden.
Declaration holder	KUBIK INDIA PVT LTD C-8/9/10, hind saurashtra industrial estate, marol naka, near mittal industrial, andheri-kurla road, andheri east, mumbai, maharashtra, india 400 059.
Product	Office Partitions
CPC Code	4212 (Version 1.1)
EPD registration number	S-P-04636
Publication date	2021-10-25
Validity date	2026-10-24
Geographical scope	Worldwide
Reference standards	ISO 14025:2006, ISO 14040/44, EN 15804:2019 +A2

Table 2: PCR Information

Reference PCR	PCR CONSTRUCTION PRODUCTS' Version 1.11, 2019:14
Date of Issue	2021-02-05 (Valid until 2024-12-20)

Table 3: Verification Information

Demonstration of verification	External, independent verification
Third party verifier	Dr Hüdaï Kara, Metsims Sustainability Consulting, 4 Clear Water Place, Oxford OX2 7NL, UK Email: <a href="mailto:hudai.kara@metsims.com">hudai.kara@metsims.com</a>

Table 4: LCA Information

Title	Environmental Product Declaration of Office Partition System
Preparer	Dr. Rajesh Kumar Singh thinkstep Sustainability Solutions - a Sphera Company 707, Meadows, Sahar Plaza, Andheri Kurla Road, Andheri East, Mumbai - 400059, India Email: <a href="mailto:rsingh@sphera.com">rsingh@sphera.com</a>

### 2.2 Reference Period of EPD Data

The reference period for the data used within this EPD is May 2020 - June 2021.

### 2.3 Geographical Scope of EPD Application

The geographical scope of this EPD is Worldwide.

### 2.4 Additional Information about EPD

This EPD provides information for Office Partition system with 12 configurations. The EPD is in accordance with ISO 14025. The Life Cycle Assessment (LCA) study is carried as per ISO 14040 and ISO 14044 requirements according to the identified PCR using Sphera Solutions Inc.'s GaBi (v10) software.

The PCR "CONSTRUCTION PRODUCTS" Version 1.11, 2019:14, being compliant with ISO 14025, ISO 14040 and ISO 14044 is used





## 3. Product Description and System Boundaries

The Office Partition system has 12 configurations. Each configuration of Office Partition system is made of Aluminium extrusion profile, Glass, Steel and Plastics. Glass may be either Toughened, Laminated or Annealed glass & systems may be glazed with glass up to 13.52mm thickness. Office partition systems The model number, name and product image of 12 configurations of Office Partition system are provided in Table 1. The range of percentage material content is provided in Table 2.







The declared unit is: 1 piece of Partition system measuring 3.0 m x 2.7 m, with 1 m wide opening door incorporated and Glass thickness of 10 mm with varying dimensions of standard track section.

Table 1 Partition System Models (Configurations)

Model no.	Name	Product Weight (kg)	Product Description	Product Image
Model 1	Acosoft 40 (Single Glazed)	138.02	<p>Acosoft 40 Partition is the unique partition for acoustic in sliding solution with dimension 40mm x 25mm.</p> <p>(1) Special Slim design &amp; Brooklyn option is available.</p> <p>(2) Suitable for 10mm / 12mm toughened glass thickness &amp; 10.52mm / 11.52mm / 12.52mm / 13.52mm laminated glass thickness</p> <p>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm</p> <p>(4) Single glazed systems</p> <p>(5) <b>Sound insulation capacity of 32 - 34 dB</b></p> <p>(6) Ready Available Finish : Silver Anodized &amp; Black Anodized</p>	
Model 2	Dotline 25 (Single Glazed)	136.76	<p>Dotline 25 series is a demountable office partition system with minimal section visibility &amp; strong acoustic insulation. Key features</p> <p>(1) Standard track section 25mm x 25mm &amp; 25mm x 40mm</p> <p>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm/13.52mm laminated glass.</p> <p>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm</p> <p>(4) Single glazed systems</p> <p>(5) <b>Sound insulation capacity of 32-34 dB</b></p> <p>(6) Ready Available Finish : Silver Anodized &amp; Black Anodized</p> <p>(7) Brooklyn option available</p>	
Model 3	Duoline 100 (Double Glazed)	277.07	<p>Duoline 100 provides excellent acoustic values with optimum transparency. Key features</p> <p>(1) Standard track section : 100mm x 25mm &amp; 100mm x 50mm</p> <p>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm laminated glass.</p> <p>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm.</p> <p>(4) Double glazed systems</p> <p>(5) <b>Sound insulation capacity of 46-49 dB</b></p> <p>(6) Ready Available Finish : Silver Anodized &amp; Black Anodized</p> <p>(7) Brooklyn option is available.</p>	
Model 4	Ecoline 100 (Single Glazed)	143.56	<p>Ecoline 100 is an elegant glass partition with maximum transparency with key features</p> <p>(1) Standard track section 100mm x 25mm &amp; 100mm x 50mm.</p> <p>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm/13.52mm laminated glass.</p> <p>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm</p> <p>(4) Single glazed systems</p> <p>(5) <b>Sound insulation capacity of 32 - 34 dB</b></p> <p>(6) Brooklyn option is available</p> <p>(7) Ready Available Finish : Silver Anodized &amp; Black Anodized</p>	



Model no.	Name	Product Weight (kg)	Product Description	Product Image
Model 5	Etaline 80 (Single Glazed)	141.42	<p>Etaline 80 provides excellent acoustic values, incorporating the aesthetic values of a slim drywall partitioning with glass panel construction, slimmest of all available section. Key features</p> <p>(1) Standard track dimension : 80mm x 18mm &amp; 80mm x 36mm</p> <p>(2) Suitable for 10mm/12mm toughened glass and 10.52mm/11.52mm/12.52mm laminated glass</p> <p>(3) Single door frame sizes to allow for 35mm to 45mm doors</p> <p>(4) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm</p> <p>(5) Single glazed system</p> <p>(6) <b>Sound insulation capacity of 30dB-33dB.</b></p> <p>(7) Brooklyn option is available (8) Ready Available Finish : Silver Anodized &amp; Black Anodized</p>	
Model 6	Kwentha 54 (Double Glazed)	275.65	<p>Kwentha 54 (Double Glaze) series is a demountable office partition system is pure in design with multiple options. Key features</p> <p>(1) Standard track section 54mm x 25mm</p> <p>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm laminated glass.</p> <p>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm.</p> <p>(4) Double glazed systems</p> <p>(5) <b>Sound insulation capacity of 46-49 dB</b></p> <p>(6) Ready Available Finish : Silver Anodized &amp; Black Anodized</p> <p>(7) Brooklyn option is available.</p>	
Model 7	Kwentha 54 (Offset Single Glazed)	138.17	<p>Kwentha 54 (Offset Glaze) series is a demountable office partition system is pure in design with multiple options. Key features</p> <p>(1) Standard track section 54mm x 25mm</p> <p>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm/13.52mm laminated glass.</p> <p>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm.</p> <p>(4) Offset Single glazed systems</p> <p>(5) <b>Sound insulation capacity of 32-36 dB</b></p> <p>(6) Ready Available Finish : Silver Anodized &amp; Black Anodized</p> <p>(7) Brooklyn option is available.</p>	
Model 8	Kwentha 54 (Centre Glazed)	141.09	<p>Kwentha 54 (Centre Glaze) series is a demountable office partition system is pure in design with multiple options. Key features</p> <p>(1) Standard track section 54mm x 25mm</p> <p>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm/13.52mm laminated glass.</p> <p>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm.</p> <p>(4) Single glazed systems</p> <p>(5) <b>Sound insulation capacity of 32-36 dB</b></p> <p>(6) Single glaze can be easily converted to double glaze or offset glaze without altering base section</p> <p>(7) Ready Available Finish : Silver Anodized &amp; Black Anodized.</p> <p>(8) Brooklyn option is available</p>	





Model no.	Name	Product Weight (kg)	Product Description	Product Image
Model 9	Magic wall (Double Glazed)	281.52	<p>Magic Wall is a superior double glaze profile system that provide an elegant design solutions. Key features:</p> <ul style="list-style-type: none"> <li>(1) Standard track section : 60mm x 30mm</li> <li>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm laminated glass</li> <li>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm</li> <li>(4) Double glazed systems</li> <li>(5) Brooklyn option is available</li> <li>(6) <b>Sound insulation up to 45dB</b></li> <li>(7) Openable stile door &amp; wood door option available</li> </ul>	
Model 10	Slimo wall (Single Glazed)	148.04	<p>Slimo Wall is a superior aluminium profile system that provide an elegant design solutions. Key features:</p> <ul style="list-style-type: none"> <li>(1) Standard track section : 60mm x 30mm</li> <li>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm/13.52mm laminated glass</li> <li>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm</li> <li>(4) Single glazed systems</li> <li>(5) Sliding Door &amp; Swing Door both options available</li> <li>(6) <b>Sound insulation up to 39dB</b></li> <li>(7) Brooklyn option is available</li> </ul>	
Model 11	Ultraline 45 (Single Glazed)	138.05	<p>Ultraline 45 - Ultraline 45 is a superior lightweight profile system that provide an elegant and cost effective design solutions. Key features:</p> <ul style="list-style-type: none"> <li>(1) Standard track section : 45mm x 25mm</li> <li>(2) Suitable for 10mm/12mm toughened glass &amp; 10.52mm/11.52mm/12.52mm/13.52mm laminated glass</li> <li>(3) Partition height can be offered up to 3000mm &amp; width of glass panel not more than 1200mm</li> <li>(4) Single door frame sizes to allow for flush door 35mm</li> <li>(5) Single glazed systems</li> <li>(6) <b>Sound insulation capacity of 32 dB - 34 dB</b></li> <li>(7) Ready Available Finish : Silver Anodized &amp; Black Anodized</li> <li>(8) Brooklyn option available</li> </ul>	
Model 12	FINESSE 100 (Double Glazed)	184.56	<p>Finesse 100 walls you can easily move beyond permanent drywall solutions &amp; rigid space planning to create flexible &amp; usable workspace solutions which are ready to reconfigure &amp; walls that are easy to relocate for whatever change the future brings. Key features</p> <ul style="list-style-type: none"> <li>(1) 100mm thick demountable partition</li> <li>(2) Maximum height : 3000mm &amp; width of panel not more than 1200mm, for bigger heights, reinforcement of the structure is required</li> <li>(3) Cove visibility of 25mm on top &amp; bottom</li> <li>(4) Glass of 5mm/6mm can be used as per requirements</li> <li>(5) It can be incorporated with wooden panel on both sides &amp; rockwool in between the panel or glass panel on both sides or one side wood one side glass.</li> </ul>	

Table 2 Materials by % mass for Partition System Model

Material	% Distribution (Single Glazed)	% Distribution (Double Glazed)	% Recycled Content
Aluminium	2-16	3-5	32
Glass	81-97	94-96	7
Steel	1-3	1	56
<b>Total</b>	100		

## 4. LCA

### 4.1 Information Sources and Data Quality

Kubik provided primary data with a very high data quality. The quality of the LCI data for modelling the life cycle stages, assessed according to ISO 14044 (2006) is judged by its precision (measured, calculated or estimated), completeness (e.g. are there unreported emissions), consistency (degree of uniformity of the methodology applied on an LCA serving as a data source) and representativeness (geographical, time period, technology). To achieve this, industry data collected directly from the producer were used wherever possible. All upstream LCA data from the GaBi Professional database (CUP 2021.1) from Sphera Solutions Inc.

### 4.2 Methodological Details

#### 4.2.1 Declared unit

The declared unit is 1 piece of Partition measuring 3.0 (width) m x 2.7 (height) m with 1.0 m wide opening door incorporated & glass thickness of 10mm.

#### 4.2.2 Selection of application of LCIA categories

The environmental impacts per declared unit for the following environmental impact categories are reported in the EPD according to the mentioned PCR in modular format of A-D from the respective method.

Table 3 Environmental Impacts Indicators

Impact Indicator	LCIA Method	Unit
<b>Global Warming Potential (GWP-total)</b>	IPCC 2013	kg CO <sub>2</sub> equivalent
<b>Global Warming Potential (GWP-fossil)</b>	IPCC 2013	kg CO <sub>2</sub> equivalent
<b>Global Warming Potential (GWP-biogenic)</b>	IPCC 2013	kg CO <sub>2</sub> equivalent
<b>Global Warming Potential land use and land use change (GWP-luluc)</b>	IPCC 2013	kg CO <sub>2</sub> equivalent
<b>Acidification Potential</b>	CML	mol SO <sub>2</sub> equivalent
<b>Eutrophication Potential (EP-freshwater)</b>	CML	kg P equivalent
<b>Photochemical Ozone Creation Potential</b>	CML	kg ethene equivalent
<b>Abiotic depletion potential – Elements</b>	CML	kg Sb equivalent
<b>Abiotic depletion potential – Fossil fuels</b>	CML	MJ, net calorific value
<b>Water scarcity potential</b>	AWARE 2016	m <sup>3</sup> world equivalent deprived



The consumption of resources declared per function unit is reported in the EPD. Input parameters, describing resource use are shown in Table 4.

Table 4 Resources Use Parameters

Parameter	Unit
Primary energy resources – Renewable	MJ, net calorific value
Primary energy resources – Non-Renewable	MJ, net calorific value
Secondary Material	kg
Renewable secondary fuels	MJ, net calorific value
Non-renewable secondary fuels	MJ, net calorific value
Net use of fresh water	m <sup>3</sup>

Table 5 Optional Environmental Indicators

Parameter	Unit
Human toxicity, cancer (recommended and interim)	cases
Human toxicity, non-canc. (recommended and interim)	cases
Fresh water ecotoxicity (recommended and interim)	PAF.m <sup>3</sup> .day
Land Use	species. yr

Table 6 Waste Categories

Waste categories	Unit
Hazardous waste disposed	kg
Non-hazardous waste disposed	kg
Radioactive waste disposed/stored	kg

Table 7 Indicators Describing the Output Flows

Parameter	Unit
Components for reuse	kg
Material for recycling	kg
Materials for energy recovery	kg
Exported energy, electricity	MJ
Exported energy, thermal	MJ

#### 4.3 Cut-off Criteria

Input and output data have been collected through detailed questionnaire. In practice, this means that, at least, all material flows going into the production processes (inputs) higher than 1% of the total mass flow (t) or higher than 1% of the total primary energy input (MJ) are part of the system and modelled in order to calculate elementary flows. Inputs with less than 1% of mass flow and less than 1% of the total primary energy input are also considered as all these were environmentally relevant.

#### 4.4 Allocation

No allocation has been done. As no co-products are produced, the flow of materials and energy and the associated release of substances and energy into the environment is related exclusively to the

Office Partition System model produced. Any allocation performed in the background processes is according to the PCR in GaBi Professional database (CUP 2021.1) from Sphera Solutions Inc.

#### 4.5 System Boundaries

The system boundary for Partition System represents a Cradle-to-Grave, which covers production Phase, packaging phase and End of life phase. The production phase includes the raw material extraction, production of the raw materials, auxiliary material production, upstream transportation, manufacturing process of the final product and its packaging. End of life phase includes waste processing for reuse, recovery or recycling and disposal.

Table 8 Details of System Boundary included in the Study

EPD Module	Life Cycle Stages	Life Cycle Sub-stages	Definitions
A1	Materials	Primary raw material production	Extraction and production of raw material in the upstream
A2	Upstream Transport	-	Transport of raw material to the assembly site
A3	Manufacturing	Assembly of partition	Assembly of raw material to form packed partition product i.e. aluminium extrusion profile, glass, steel cold rolled coil, fixing material screws and packing material like plastic film, plastic foil and corrugated paper
A4	Transport	-	Transport of packed partition to installation site
A5	Installation	-	Separation of packaging material and installation of partition system
C1	Deconstruction and demolition	-	Considered to be zero as manual separation of parts of partition system is considered
C2	Transport	-	With a collection rate of 100%, the transports are carried out by truck over 50 km
C3	Waste Processing	Segregation	Separation of aluminium, steel, plastic and inert matter to landfill and end of life treatment
C4	Disposal	-	Material not getting recycled is considered for landfill. Thus 5% of aluminium is considered for landfill as 95% is considered for credit and 15% of steel is considered for landfill as 85% is considered for credit
D	EOL Credit	-	Aluminium and Steel is 100% recyclable material and as per World Steel Data 85% recoverability is observed while as per IAI global bench mark the recycling rate is 98.5%. Thus 85% of steel and 95% of aluminium is considered for EOL credit

#### 4.5.1 Geographic System Boundaries

The geographical coverage of this EPD covers the production of all the 12 configurations of Office Partition system India. Wherever possible, the Country specific (India) boundaries have been adapted and other datasets were chosen from EU if no India datasets were available

#### 4.5.2 Temporal System Boundaries

The data collection is related to one year of production . The majority of data was derived for the year 2020-21 (May 2020 to June 2021) and is believed to be representative of production of ‘Office Partition’ in India during this time frame.

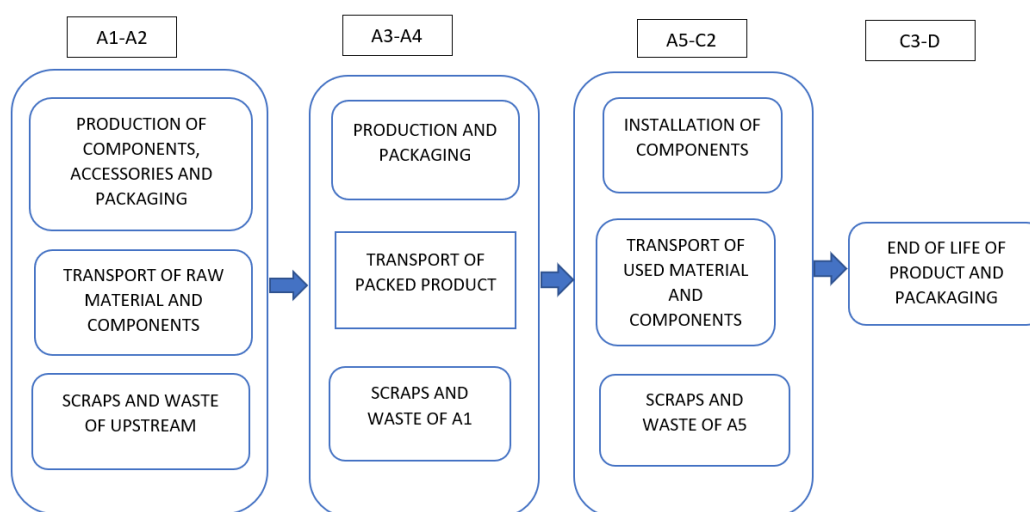


Figure 1 Details of System Boundary for Partition System

#### 4.5.3 Technology coverage

The exact technological configuration was used for the various process's operation of its plant for efficient performance in production and minimizing environmental impacts. It was assumed that secondary data from databases that were used for this assessment, were temporally and technologically comparable to that of primary data and within the temporal coverage already addressed.

#### 4.6 Software and database

The LCA model was created using the GaBi v10 Software system for life cycle engineering, developed by Sphera Solutions. The GaBi database (CUP 2021) provides the life cycle inventory data for several of the raw and process materials obtained from the upstream system. Detailed database documentation for GaBi datasets can be accessed at <https://gabi.sphera.com/international/support/gabi/gabi-database-2021-lci-documentation/>

#### 4.7 Comparability

According to the standards, EPDs do not compare the environmental performance of products in the sector. Any comparison of the declared environmental performance of products lies outside the scope of these standards and is suggested to be feasible only if all compared declarations follow equal standard provisions.

## 4.8 Results

Modules of the production life cycle included as per PCR is given in Table

Table 9 Modules of Production life cycle included (X= Declared Module; MND = Module not declared)

Production			Installation		Use Stage							End of Life				Next Product System
Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport to EoL	Waste processing for reuse, re-covey or recycling	Disposal	Reuse, recovery or recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X



The tables below show the life cycle environmental impacts for 1 piece of Partition of 3.0 m x 2.7 m in which 1.0 m wide opening door incorporated & glass thickness 10mm

4.8.1. **Partition System Model 1:** The table below shows the LCIs, LCIA Resource use, for ACOSOFT 40 (Single Glazed) Model 1 configuration.

Table 10 LCIA and LCI Result for Partition System Model 1

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	3.24E+02	6.39E-01	1.03E+00	0	6.35E-01	8.11E+00	1.26E-02	-5.73E+01
Climate Change, fossil	[kg CO2 eq.]	3.24E+02	6.39E-01	9.53E-05	0	6.34E-01	2.15E+00	3.29E-03	-5.73E+01
Climate Change, biogenic	[kg CO2 eq.]	-3.79E-01	3.49E-04	1.03E+00	0	3.46E-04	5.96E+00	9.27E-03	3.26E-02
Climate Change, land use and land use change	[kg CO2 eq.]	2.45E-01	3.34E-05	-1.49E-04	0	3.32E-05	1.07E-03	1.64E-06	-9.23E-02
Ozone depletion	[kg CFC-11 eq.]	6.55E-12	5.26E-17	-1.29E-16	0	5.22E-17	8.09E-15	1.25E-17	-1.78E-13
Acidification	[Mole of H+ eq.]	3.03E+00	5.43E-03	-6.85E-04	0	5.39E-03	1.59E-02	2.45E-05	-6.82E-01
Eutrophication, freshwater	[kg P eq.]	2.90E-04	1.35E-07	1.18E-05	0	1.34E-07	1.56E-05	1.57E-08	-4.09E-05
Eutrophication, marine	[kg N eq.]	5.49E-01	2.49E-03	8.27E-05	0	2.47E-03	4.18E-03	6.45E-06	-7.57E-02
Eutrophication, terrestrial	[Mole of N eq.]	6.21E+00	2.73E-02	1.51E-04	0	2.71E-02	4.57E-02	7.05E-05	-8.32E-01
Photochemical ozone formation, human health	[kg NMVOC eq.]	1.27E+00	4.76E-03	3.17E-04	0	4.72E-03	1.45E-02	2.23E-05	-2.32E-01
Resource use, mineral and metals	[kg Sb eq.]	2.06E-05	8.46E-09	-1.02E-09	0	8.40E-09	1.61E-07	2.47E-10	-3.91E-06
Resource use, fossils	[MJ]	4.03E+03	8.49E+00	3.06E-01	0	8.43E+00	2.75E+01	4.21E-02	-5.81E+02
Water use	[m³ world equiv.]	2.17E+01	1.93E-03	-7.54E-03	0	1.92E-03	2.16E-01	3.36E-04	-5.08E+00

Table 11 Resource use indicators Result for Partition System Model 1

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	3.63E+02	2.77E-02	-8.85E-02	0	2.75E-02	3.26E+00	5.02E-03	-8.39E+01
Total use of renewable primary energy resources (PERT)	[MJ]	3.63E+02	2.77E-02	-8.85E-02	0	2.75E-02	3.26E+00	5.02E-03	-8.39E+01
Use of non-renewable primary energy (PENRE)	[MJ]	4.03E+03	8.49E+00	3.06E-01	0	8.43E+00	2.75E+01	4.21E-02	-5.81E+02
Total use of non-renewable primary energy resources (PENRT)	[MJ]	4.03E+03	8.49E+00	3.06E-01	0	8.43E+00	2.75E+01	4.21E-02	-5.81E+02
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	7.32E-01	6.66E-05	-2.39E-04	0	6.61E-05	6.20E-03	9.64E-06	-1.79E-01

Table 12 Waste Categories and other indicators Result for Partition System Model 1

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	8.20E-07	3.92E-11	-9.19E-11	0	3.89E-11	2.80E-09	4.29E-12	-1.07E-07
Non-hazardous waste disposed (NHWD)	kg	4.78E+01	1.53E-04	9.96E-01	0	1.52E-04	1.33E+02	2.06E-01	-1.09E+01
Radioactive waste disposed (RWD)	kg	5.99E-02	1.84E-06	-4.13E-06	0	1.83E-06	2.48E-04	3.83E-07	-5.21E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	3.17E-05	3.59E-08	-1.40E-08	0	3.56E-08	1.94E-07	3.00E-10	-1.12E-05
Ionising radiation, human health	kBq U235 eq.	8.95E+00	1.73E-04	-3.90E-04	0	1.71E-04	2.28E-02	3.51E-05	-4.87E-01
Ecotoxicity, freshwater	CTUe	4.46E+03	3.33E00	9.41E-01	0	3.31E00	4.47E01	6.89E-02	-1.07E02
Human toxicity, cancer	CTUh	3.62E-08	5.74E-11	3.61E-11	0	5.70E-11	2.24E-09	3.45E-12	-7.74E-09
Human toxicity, non-cancer	CTUh	2.73E-06	2.72E-09	3.98E-09	0	2.70E-09	2.55E-07	3.94E-10	-4.53E-07
Land Use	Pt	5.53E+02	3.67E-02	-1.42E-01	0	3.64E-02	3.42E00	5.27E-03	-1.16E02

4.8.2 Partition System Model 2: The table below shows the LCIs, LCIA Resource use, for DOTLINE 25 (Single Glazed) Model 1 configuration.

Table 13 LCIA and LCI Result for Partition System Model 2

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO <sub>2</sub> eq.]	2.91E+02	6.34E-01	1.03E+00	0	6.28E-01	7.99E+00	8.66E-03	-3.92E+01
Climate Change, fossil	[kg CO <sub>2</sub> eq.]	2.91E+02	6.33E-01	9.52E-05	0	6.28E-01	2.11E+00	2.27E-03	-3.92E+01
Climate Change, biogenic	[kg CO <sub>2</sub> eq.]	-3.92E-01	3.46E-04	1.03E+00	0	3.43E-04	5.88E+00	6.39E-03	2.23E-02
Climate Change, land use and land use change	[kg CO <sub>2</sub> eq.]	1.93E-01	3.31E-05	-1.49E-04	0	3.28E-05	1.05E-03	1.13E-06	-6.32E-02
Ozone depletion	[kg CFC-11 eq.]	6.46E-12	5.21E-17	-1.29E-16	0	5.17E-17	7.97E-15	8.59E-18	-1.22E-13
Acidification	[Mole of H <sup>+</sup> eq.]	2.64E+00	5.38E-03	-6.84E-04	0	5.33E-03	1.56E-02	1.69E-05	-4.67E-01
Eutrophication, freshwater	[kg P eq.]	2.67E-04	1.34E-07	1.18E-05	0	1.33E-07	1.50E-05	1.08E-08	-2.80E-05
Eutrophication, marine	[kg N eq.]	5.06E-01	2.47E-03	8.25E-05	0	2.45E-03	4.12E-03	4.45E-06	-5.19E-02
Eutrophication, terrestrial	[Mole of N eq.]	5.74E+00	2.71E-02	1.51E-04	0	2.68E-02	4.50E-02	4.86E-05	-5.69E-01
Photochemical ozone formation, human health	[kg NMVOC eq.]	1.14E+00	4.71E-03	3.17E-04	0	4.67E-03	1.43E-02	1.54E-05	-1.59E-01
Resource use, mineral and metals	[kg Sb eq.]	1.88E-05	8.38E-09	-1.02E-09	0	8.30E-09	1.58E-07	1.70E-10	-2.84E-06
Resource use, fossils	[MJ]	3.71E+03	8.41E+00	3.05E-01	0	8.34E+00	2.71E+01	2.90E-02	-3.98E+02
Water use	[m <sup>3</sup> world equiv.]	1.89E+01	1.92E-03	-7.53E-03	0	1.90E-03	2.13E-01	2.32E-04	-3.48E+00



Table 14 Resource use Result for Partition System Model 2

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	3.17E+02	2.74E-02	-8.83E-02	0	2.72E-02	3.21E+00	3.46E-03	-5.74E+01
Total use of renewable primary energy resources (PERT)	[MJ]	3.17E+02	2.74E-02	-8.83E-02	0	2.72E-02	3.21E+00	3.46E-03	-5.74E+01
Use of non-renewable primary energy (PENRE)	[MJ]	3.71E+03	8.41E+00	3.05E-01	0	8.34E+00	2.71E+01	2.90E-02	-3.98E+02
Total use of non-renewable primary energy resources (PENRT)	[MJ]	3.71E+03	8.41E+00	3.05E-01	0	8.34E+00	2.71E+01	2.90E-02	-3.98E+02
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	6.32E-01	6.60E-05	-2.39E-04	0	6.54E-05	6.11E-03	6.64E-06	-1.22E-01

Table 15 Waste Categories and Other Indicators Result for Partition System Model 2

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	7.59E-07	3.92E-11	-9.19E-11	0	3.89E-11	2.80E-09	4.29E-12	-1.07E-07
Non-hazardous waste disposed (NHWD)	kg	4.18E+01	1.53E-04	9.96E-01	0	1.52E-04	1.33E+02	2.06E-01	-1.09E+01
Radioactive waste disposed (RWD)	kg	5.70E-02	1.84E-06	-4.13E-06	0	1.83E-06	2.48E-04	3.83E-07	-5.21E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	2.54E-05	3.59E-08	-1.40E-08	0	3.56E-08	1.94E-07	3.00E-10	-1.12E-05
Ionising radiation, human health	kBq U235 eq.	8.68E+00	1.73E-04	-3.90E-04	0	1.71E-04	2.28E-02	3.51E-05	-4.87E-01
Ecotoxicity, freshwater	CTUe	4.40E+03	3.33E00	9.41E-01	0	3.31E00	4.47E01	6.89E-02	-1.07E02
Human toxicity, cancer	CTUh	3.19E-08	5.74E-11	3.61E-11	0	5.70E-11	2.24E-09	3.45E-12	-7.74E-09
Human toxicity, non-cancer	CTUh	2.48E-06	2.72E-09	3.98E-09	0	2.70E-09	2.55E-07	3.94E-10	-4.53E-07
Land Use	Pt	4.92E+02	3.67E-02	-1.42E-01	0	3.64E-02	3.42E00	5.27E-03	-1.16E02

**4.8.3 Partition System Model 3:** The table below shows the LCIs, LCIA Resource use, Waste categories for Partition System Model 3 Duoline 100 (Double Glazed) configuration.

Table 16 LCIA and LCI Result for Partition System Model 3

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	5.05E+02	5.51E-02	5.98E+00	0	5.51E-02	9.77E+01	1.17E-03	5.24E+06
Climate Change, fossil	[kg CO2 eq.]	5.05E+02	5.51E-02	-1.78E-01	0	5.51E-02	2.62E+01	3.08E-04	5.24E+06
Climate Change, biogenic	[kg CO2 eq.]	-5.86E-01	3.01E-05	6.16E+00	0	3.01E-05	7.14E+01	8.67E-04	1.08E+03
Climate Change, land use and land use change	[kg CO2 eq.]	5.82E-01	2.88E-06	-9.64E-04	0	2.88E-06	1.30E-02	1.53E-07	-1.88E+03
Ozone depletion	[kg CFC-11 eq.]	6.80E-12	4.54E-18	-1.18E-15	0	4.54E-18	9.81E-14	1.17E-18	-3.37E-09
Acidification	[Mole of H+ eq.]	4.68E+00	4.68E-04	-4.85E-03	0	4.68E-04	1.92E-01	2.29E-06	-4.30E+03
Eutrophication, freshwater	[kg P eq.]	3.16E-04	1.17E-08	3.90E-05	0	1.17E-08	2.75E-04	1.47E-09	4.65E-01
Eutrophication, marine	[kg N eq.]	6.81E-01	2.15E-04	3.09E-04	0	2.15E-04	5.06E-02	6.03E-07	3.67E+02
Eutrophication, terrestrial	[Mole of N eq.]	8.01E+00	2.36E-03	-1.14E-03	0	2.36E-03	5.53E-01	6.59E-06	4.03E+03
Photochemical ozone formation, human health	[kg NMVOC eq.]	1.93E+00	4.10E-04	1.35E-03	0	4.10E-04	1.75E-01	2.09E-06	8.94E+02
Resource use, mineral and metals	[kg Sb eq.]	2.62E-05	7.29E-10	-1.64E-08	0	7.29E-10	1.96E-06	2.31E-11	4.55E-02
Resource use, fossils	[MJ]	6.09E+03	7.32E-01	-7.16E-01	0	7.32E-01	3.37E+02	3.94E-03	3.92E+07
Water use	[m³ world equiv.]	3.66E+01	1.67E-04	-4.09E-02	0	1.67E-04	2.57E+00	3.15E-05	1.53E+05

Table 17 Resource Use Indicators of Partition System Model 3

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	5.57E+02	2.39E-03	-6.89E-01	0	2.39E-03	3.95E+01	4.70E-04	-1.75E+06
Total use of renewable primary energy resources (PERT)	[MJ]	5.57E+02	2.39E-03	-6.89E-01	0	2.39E-03	3.95E+01	4.70E-04	-1.75E+06
Use of non-renewable primary energy (PENRE)	[MJ]	6.09E+03	7.32E-01	-7.16E-01	0	7.32E-01	3.37E+02	3.94E-03	3.92E+07
Total use of non-renewable primary energy resources (PENRT)	[MJ]	6.09E+03	7.32E-01	-7.16E-01	0	7.32E-01	3.37E+02	3.94E-03	3.92E+07
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	1.41E+00	5.74E-06	-1.43E-03	0	5.74E-06	7.42E-02	9.01E-07	7.45E+02



Table 18 Waste Categories and Other Indicators of Partition System Model 3

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	7.59E-07	3.92E-11	-9.19E-11	0	3.89E-11	2.80E-09	4.29E-12	-1.07E-07
Non-hazardous waste disposed (NHWD)	kg	4.18E+01	1.53E-04	9.96E-01	0	1.52E-04	1.33E+02	2.06E-01	-1.09E+01
Radioactive waste disposed (RWD)	kg	5.70E-02	1.84E-06	-4.13E-06	0	1.83E-06	2.48E-04	3.83E-07	-5.21E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	8.33E-05	3.09E-09	-9.23E-08	0	3.09E-09	2.35E-06	2.81E-11	-9.72E-02
Ionising radiation, human health	kBq U235 eq.	3.15E+00	1.49E-05	-3.51E-03	0	1.49E-05	2.76E-01	3.28E-06	-8.54E+03
Ecotoxicity, freshwater	CTUe	1.08E+04	2.87E-01	3.40E+00	0	2.87E-01	5.42E+02	6.45E-03	3.40E+06
Human toxicity, cancer	CTUh	7.00E-08	4.95E-12	1.17E-10	0	4.95E-12	2.71E-08	3.23E-13	-7.20E-05
Human toxicity, non-cancer	CTUh	4.46E-06	2.35E-10	1.66E-08	0	2.35E-10	3.07E-06	3.69E-11	-8.10E-04
Land Use	Pt	8.95E+02	3.16E-03	-1.00E+00	0	3.16E-03	4.14E+01	4.93E-04	-1.49E+06

**4.8.4 Partition System Model 4:** The table below shows the LCIs, LCIA Resource use, Waste categories for Partition System Model 4 ECOLINE 100 (Single Glazed) configuration.

Table 19 LCIA and LCI Result for Partition System Model 4

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	4.73E+02	6.65E-01	1.02E00	0	6.58E-01	8.08E00	2.92E-02	-1.35E02
Climate Change, fossil	[kg CO2 eq.]	4.73E+02	6.64E-01	9.50E-05	0	6.58E-01	2.14E00	7.66E-03	-1.34E02
Climate Change, biogenic	[kg CO2 eq.]	-3.16E-01	3.63E-04	1.02E00	0	3.59E-04	5.94E00	2.16E-02	7.65E-02
Climate Change, land use and land use change	[kg CO2 eq.]	4.86E-01	3.47E-05	-1.49E-04	0	3.44E-05	1.06E-03	3.82E-06	-2.17E-01
Ozone depletion	[kg CFC-11 eq.]	6.99E-12	5.47E-17	-1.28E-16	0	5.42E-17	8.06E-15	2.90E-17	-4.18E-13
Acidification	[Mole of H+ eq.]	4.81E+00	5.64E-03	-6.83E-04	0	5.59E-03	1.58E-02	5.70E-05	-1.60E00
Eutrophication, freshwater	[kg P eq.]	3.96E-04	1.41E-07	1.18E-05	0	1.39E-07	1.56E-05	3.65E-08	-9.60E-05
Eutrophication, marine	[kg N eq.]	7.48E-01	2.59E-03	8.24E-05	0	2.56E-03	4.17E-03	1.50E-05	-1.78E-01
Eutrophication, terrestrial	[Mole of N eq.]	8.39E+00	2.84E-02	1.50E-04	0	2.81E-02	4.55E-02	1.64E-04	-1.95E00
Photochemical ozone formation, human health	[kg NMVOC eq.]	1.88E+00	4.95E-03	3.16E-04	0	4.90E-03	1.44E-02	5.20E-05	-5.46E-01
Resource use, mineral and metals	[kg Sb eq.]	2.92E-05	8.79E-09	-1.02E-09	0	8.71E-09	1.60E-07	5.76E-10	-8.47E-06
Resource use, fossils	[MJ]	5.55E+03	8.83E00	3.05E-01	0	8.74E00	2.74E01	9.80E-02	-1.36E03
Water use	[m³ world equiv.]	3.49E+01	2.01E-03	-7.51E-03	0	1.99E-03	2.15E-01	7.83E-04	-1.19E01

Table 20 Resource Use Indicators of Partition System Model 4

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	5.81E+02	2.88E-02	-8.82E-02	0	2.85E-02	3.25E+00	1.17E-02	-1.97E+02
Total use of renewable primary energy resources (PERT)	[MJ]	5.81E+02	2.88E-02	-8.82E-02	0	2.85E-02	3.25E+00	1.17E-02	-1.97E+02
Use of non-renewable primary energy (PENRE)	[MJ]	5.55E+03	8.83E+00	3.05E-01	0	8.74E+00	2.74E+01	9.80E-02	-1.36E+03
Total use of non-renewable primary energy resources (PENRT)	[MJ]	5.55E+03	8.83E+00	3.05E-01	0	8.74E+00	2.74E+01	9.80E-02	-1.36E+03
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	1.41E+00	5.74E-06	-1.43E-03	0	0	5.74E-06	7.42E-02	9.01E-07

Table 21 Waste categories and other indicators of Model 4

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	1.10E-06	4.07E-11	-9.16E-11	0	4.03E-11	2.79E-09	9.98E-12	-2.52E-07
Non-hazardous waste disposed (NHWD)	kg	7.60E+01	1.59E-04	9.92E-01	0	1.57E-04	1.33E+02	4.81E-01	-2.56E+01
Radioactive waste disposed (RWD)	kg	7.36E-02	1.92E-06	-4.12E-06	0	1.90E-06	2.48E-04	8.91E-07	-1.22E-02
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	6.08E-05	3.73E-08	-1.39E-08	0	3.69E-08	1.94E-07	6.98E-10	-2.63E-05
Ionising radiation, human health	kBq U235 eq.	1.02E+01	1.80E-04	-3.89E-04	0	1.78E-04	2.27E-02	8.18E-05	-1.14E+00
Ecotoxicity, freshwater	CTUe	4.74E+03	3.46E+00	9.38E-01	0	3.43E+00	4.46E+01	1.60E-01	-2.51E+02
Human toxicity, cancer	CTUh	5.63E-08	5.97E-11	3.60E-11	0	5.91E-11	2.23E-09	8.04E-12	-1.82E-08
Human toxicity, non-cancer	CTUh	3.93E-06	2.83E-09	3.97E-09	0	2.80E-09	2.54E-07	9.18E-10	-1.06E-06
Land Use	Pt	8.39E+02	3.82E-02	-1.41E-01	0	3.78E-02	3.41E+00	1.23E-02	-2.73E+02

4.8.5 Partition System Model 5: The table below shows the LCIs, LCIA Resource use, Waste categories for Partition System ETALINE 80 (Single Glazed) Model 5 configuration.

Table 22 LCIA and LCI Result for Partition System Model 5

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	4.16E+02	6.55E-01	1.02E+00	0	6.48E-01	8.07E+00	2.28E-02	-1.05E+02
Climate Change, fossil	[kg CO2 eq.]	4.16E+02	6.55E-01	9.49E-05	0	6.47E-01	2.14E+00	5.96E-03	-1.04E+02
Climate Change, biogenic	[kg CO2 eq.]	-3.40E-01	3.57E-04	1.02E+00	0	3.54E-04	5.94E+00	1.68E-02	5.95E-02
Climate Change, land use and land use change	[kg CO2 eq.]	3.93E-01	3.42E-05	-1.49E-04	0	3.38E-05	1.06E-03	2.97E-06	-1.68E-01
Ozone depletion	[kg CFC-11 eq.]	6.82E-12	5.39E-17	-1.28E-16	0	5.33E-17	8.05E-15	2.26E-17	-3.25E-13
Acidification	[Mole of H+ eq.]	4.13E+00	5.56E-03	-6.83E-04	0	5.50E-03	1.58E-02	4.43E-05	-1.24E+00
Eutrophication, freshwater	[kg P eq.]	3.56E-04	1.39E-07	1.18E-05	0	1.37E-07	1.51E-05	2.84E-08	-7.46E-05
Eutrophication, marine	[kg N eq.]	6.71E-01	2.55E-03	8.24E-05	0	2.52E-03	4.16E-03	1.17E-05	-1.38E-01
Eutrophication, terrestrial	[Mole of N eq.]	7.55E+00	2.80E-02	1.50E-04	0	2.77E-02	4.54E-02	1.28E-04	-1.52E+00
Photochemical ozone formation, human health	[kg NMVOC eq.]	1.64E+00	4.87E-03	3.16E-04	0	4.82E-03	1.44E-02	4.05E-05	-4.24E-01
Resource use, mineral and metals	[kg Sb eq.]	2.59E-05	8.66E-09	-1.02E-09	0	8.57E-09	1.60E-07	4.48E-10	-6.70E-06
Resource use, fossils	[MJ]	4.96E+03	8.70E+00	3.05E-01	0	8.60E+00	2.74E+01	7.63E-02	-1.06E+03
Water use	[m³ world equiv.]	2.98E+01	1.98E-03	-7.51E-03	0	1.96E-03	2.15E-01	6.10E-04	-9.28E+00

Table 23 Resource Use Indicators of Model 5

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	8.23E+00	2.84E-02	-8.81E-02	0	2.81E-02	3.24E-00	9.10E-03	-1.53E-02
Total use of renewable primary energy resources (PERT)	[MJ]	8.23E+00	2.84E-02	-8.81E-02	0	2.81E-02	3.24E-00	9.10E-03	-1.53E-02
Use of non-renewable primary energy (PENRE)	[MJ]	5.16E-01	8.70E00	3.05E-01	0	8.60E00	2.74E-01	7.63E-02	-1.06E-03
Total use of non-renewable primary energy resources (PENRT)	[MJ]	5.16E-01	8.70E00	3.05E-01	0	8.60E00	2.74E-01	7.63E-02	-1.06E-03
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	1.02E+00	6.82E-05	-2.38E-04	0	6.75E-05	6.17E-03	1.75E-05	-3.26E-01



Table 24 Waste Categories and Other Indicators of Model 5

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	9.92E-07	4.01E-11	-9.15E-11	0	3.97E-11	2.79E-09	7.77E-12	-1.96E-07
Non-hazardous waste disposed (NHWD)	kg	6.51E+01	1.57E-04	9.92E-01	0	1.55E-04	1.33E02	3.74E-01	-1.99E01
Radioactive waste disposed (RWD)	kg	6.83E-02	1.89E-06	-4.12E-06	0	1.87E-06	2.47E-04	6.94E-07	-9.51E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	4.96E-05	3.67E-08	-1.39E-08	0	3.63E-08	1.93E-07	5.44E-10	-2.04E-05
Ionising radiation, human health	kBq U235 eq.	9.74E+00	1.77E-04	-3.89E-04	0	1.75E-04	2.27E-02	6.36E-05	-8.88E-01
Ecotoxicity, freshwater	CTUe	4.63E+03	3.41E00	9.37E-01	0	3.37E00	4.45E01	1.25E-01	-1.95E02
Human toxicity, cancer	CTUh	4.86E-08	5.88E-11	3.60E-11	0	5.81E-11	2.23E-09	6.26E-12	-1.41E-08
Human toxicity, non-cancer	CTUh	3.46E-06	2.79E-09	3.96E-09	0	2.76E-09	2.54E-07	7.15E-10	-8.27E-07
Land Use	Pt	7.29E+02	3.76E-02	-1.41E-01	0	3.72E-02	3.40E00	9.55E-03	-2.12E02

4.8.6 **Partition System Model 6:** The table below shows the LCIs, LCIA Resource use, Waste categories for Partition System Kwentha 54 (Double Glazed) (Model 6). configuration.

Table 23 LCIA and LCI Result for Partition System Model 6

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	6.27E+02	1.27E+00	1.03E+00	0	1.27E+00	1.61E+01	2.30E-02	-1.06E+02
Climate Change, fossil	[kg CO2 eq.]	6.26E+02	1.27E+00	9.51E-05	0	1.26E+00	4.25E+00	6.03E-03	-1.06E+02
Climate Change, biogenic	[kg CO2 eq.]	1.51E-01	6.94E-04	1.03E+00	0	6.91E-04	1.19E+01	1.70E-02	6.02E-02
Climate Change, land use and land use change	[kg CO2 eq.]	4.58E-01	6.64E-05	-1.49E-04	0	6.61E-05	2.12E-03	3.01E-06	-1.70E-01
Ozone depletion	[kg CFC-11 eq.]	7.30E-12	1.05E-16	-1.29E-16	0	1.04E-16	1.61E-14	2.29E-17	-3.29E-13
Acidification	[Mole of H+ eq.]	5.84E+00	1.08E-02	-6.84E-04	0	1.07E-02	3.15E-02	4.48E-05	-1.26E+00
Eutrophication, freshwater	[kg P eq.]	5.32E-04	2.69E-07	1.18E-05	0	2.68E-07	2.61E-05	2.87E-08	-7.54E-05
Eutrophication, marine	[kg N eq.]	1.08E+00	4.95E-03	8.25E-05	0	4.93E-03	8.30E-03	1.18E-05	-1.40E-01
Eutrophication, terrestrial	[Mole of N eq.]	1.22E+01	5.43E-02	1.51E-04	0	5.41E-02	9.07E-02	1.29E-04	-1.54E+00
Photochemical ozone formation, human health	[kg NMVOC eq.]	2.46E+00	9.46E-03	3.16E-04	0	9.41E-03	2.88E-02	4.10E-05	-4.29E-01
Resource use, mineral and metals	[kg Sb eq.]	3.85E-05	1.68E-08	-1.02E-09	0	1.67E-08	3.19E-07	4.53E-10	-6.77E-06
Resource use, fossils	[MJ]	7.79E+03	1.69E+01	3.05E-01	0	1.68E+01	5.44E+01	7.71E-02	-1.07E+03
Water use	[m³ world equiv.]	4.16E+01	3.84E-03	-7.52E-03	0	3.83E-03	4.31E-01	6.17E-04	-9.38E+00

Table 24 Resource Use Indicators of Model 6

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	6.65E+02	5.51E-02	-8.83E-02	0	5.48E-02	6.47E+00	9.20E-03	-1.55E+02
Total use of renewable primary energy resources (PERT)	[MJ]	6.65E+02	5.51E-02	-8.83E-02	0	5.48E-02	6.47E+00	9.20E-03	-1.55E+02
Use of non-renewable primary energy (PENRE)	[MJ]	7.79E+03	1.69E+01	3.05E-01	0	1.68E+01	5.44E+01	7.72E-02	-1.07E+03
Total use of non-renewable primary energy resources (PENRT)	[MJ]	7.79E+03	1.69E+01	3.05E-01	0	1.68E+01	5.44E+01	7.72E-02	-1.07E+03
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	1.39E+00	1.32E-04	-2.38E-04	0	1.32E-04	1.24E-02	1.77E-05	-3.29E-01

Table 25 Waste Categories and Other Indicators of Model 6

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	1.44E-06	7.79E-11	-9.17E-11	0	7.75E-11	5.55E-09	7.86E-12	-1.98E-07
Non-hazardous waste disposed (NHWD)	kg	9.25E+01	3.04E-04	9.94E-01	0	3.03E-04	2.65E02	3.78E-01	-2.02E01
Radioactive waste disposed (RWD)	kg	1.18E-01	3.67E-06	-4.13E-06	0	3.65E-06	4.93E-04	7.02E-07	-9.62E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	5.98E-05	7.13E-08	-1.39E-08	0	7.10E-08	3.86E-07	5.50E-10	-2.07E-05
Ionising radiation, human health	kBq U235 eq.	1.77E+01	3.43E-04	-3.90E-04	0	3.42E-04	4.52E-02	6.44E-05	-8.99E-01
Ecotoxicity, freshwater	CTUe	8.86E+03	6.62E00	9.39E-01	0	6.59E00	8.88E01	1.26E-01	-1.97E02
Human toxicity, cancer	CTUh	6.89E-08	1.14E-10	3.61E-11	0	1.14E-10	4.45E-09	6.33E-12	-1.43E-08
Human toxicity, non-cancer	CTUh	5.26E-06	5.42E-09	3.97E-09	0	5.39E-09	5.07E-07	7.23E-10	-8.37E-07
Land Use	Pt	8.63E+02	7.30E-02	-1.42E-01	0	7.27E-02	6.79E00	9.66E-03	-2.14E02

**4.8.7 Partition System Model 7:** The table below shows the LCIs, LCIA Resource use, Waste categories, optional indicators for Kwentha 54 (Offset Glazed) Model 7 configuration.

Table 26 LCIA and LCI Result for Partition System Model 7

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	1.44E-06	6.40E-01	1.03E00	0	6.35E-01	8.12E00	1.26E-02	-5.76E01
Climate Change, fossil	[kg CO2 eq.]	9.25E+01	6.40E-01	9.52E-05	0	6.34E-01	2.16E00	3.31E-03	-5.76E01
Climate Change, biogenic	[kg CO2 eq.]	1.18E-01	3.49E-04	1.03E00	0	3.46E-04	5.96E00	9.32E-03	3.28E-02
Climate Change, land use and land use change	[kg CO2 eq.]	0	3.34E-05	-1.49E-04	0	3.32E-05	1.07E-03	1.65E-06	-9.28E-02
Ozone depletion	[kg CFC-11 eq.]	0	5.27E-17	-1.29E-16	0	5.22E-17	8.11E-15	1.25E-17	-1.79E-13
Acidification	[Mole of H+ eq.]	0	5.43E-03	-6.85E-04	0	5.39E-03	1.59E-02	2.46E-05	-6.86E-01
Eutrophication, freshwater	[kg P eq.]	0	1.36E-07	1.18E-05	0	1.34E-07	1.73E-05	1.58E-08	-4.11E-05
Eutrophication, marine	[kg N eq.]	0	2.49E-03	8.26E-05	0	2.47E-03	4.19E-03	6.49E-06	-7.62E-02
Eutrophication, terrestrial	[Mole of N eq.]	0	2.74E-02	1.51E-04	0	2.71E-02	4.58E-02	7.09E-05	-8.36E-01
Photochemical ozone formation, human health	[kg NMVOC eq.]	5.98E-05	4.76E-03	3.17E-04	0	4.72E-03	1.45E-02	2.25E-05	-2.34E-01
Resource use, mineral and metals	[kg Sb eq.]	1.77E+01	8.66E-09	-1.02E-09	0	8.57E-09	1.60E-07	4.48E-10	-6.70E-06
Resource use, fossils	[MJ]	8.86E+03	8.70E00	3.05E-01	0	8.60E00	2.74E01	7.63E-02	-1.06E03
Water use	[m <sup>3</sup> world equiv.]	6.89E-08	1.98E-03	-7.51E-03	0	1.96E-03	2.15E-01	6.10E-04	-9.28E00

Table 27 Resource Use Indicators of Model 7

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	3.68E+02	2.77E-02	-8.84E-02	0	2.75E-02	3.26E00	5.05E-03	-8.43E01
Total use of renewable primary energy resources (PERT)	[MJ]	3.68E+02	2.77E-02	-8.84E-02	0	2.75E-02	3.26E00	5.05E-03	-8.43E01
Use of non-renewable primary energy (PENRE)	[MJ]	4.07E+03	8.50E00	3.06E-01	0	8.43E00	2.76E+01	4.23E-02	-5.84E02
Total use of non-renewable primary energy resources (PENRT)	[MJ]	4.07E+03	8.50E00	3.06E-01	0	8.43E00	2.76E+01	4.23E-02	-5.84E02
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	7.42E-01	6.67E-05	-2.39E-04	0	6.61E-05	6.20E-03	9.69E-06	-1.80E-01

Table 28 Waste Categories and Other Indicators of Model 7

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	8.27E-07	3.92E-11	-9.18E-11	0	3.89E-11	2.81E-09	4.31E-12	-1.08E-07
Non-hazardous waste disposed (NHWD)	kg	4.83E+01	1.53E-04	9.94E-01	0	1.52E-04	1.33E02	2.08E-01	-1.10E01
Radioactive waste disposed (RWD)	kg	6.02E-02	1.85E-06	-4.13E-06	0	1.83E-06	2.49E-04	3.85E-07	-5.24E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	3.22E-05	3.59E-08	-1.40E-08	0	3.56E-08	1.95E-07	3.02E-10	-1.13E-05
Ionising radiation, human health	kBq U235 eq.	8.99E+00	1.73E-04	-3.90E-04	0	1.71E-04	2.28E-02	3.53E-05	-4.90E-01
Ecotoxicity, freshwater	CTUe	4.47E+03	3.33E00	9.40E-01	0	3.31E00	4.48E01	6.93E-02	-1.07E02
Human toxicity, cancer	CTUh	3.67E-08	5.75E-11	3.61E-11	0	5.70E-11	2.24E-09	3.47E-12	-7.79E-09
Human toxicity, non-cancer	CTUh	2.77E-06	2.73E-09	3.97E-09	0	2.70E-09	2.55E-07	3.97E-10	-4.56E-07
Land Use	Pt	5.59E+02	3.68E-02	-1.42E-01	0	3.64E-02	3.42E00	5.30E-03	-1.17E+02



4.8.8 **Partition System Model 8:** The table below shows the LCIs, LCIA Resource use, Waste categories, optional indicators for Kwentha 54 (Central Glaze).

Table 29 LCIA and LCI Result for Partition System Model 8

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	8.27E-07	6.54E-01	1.03E00	0	6.49E-01	8.06E00	2.18E-02	-9.99E01
Climate Change, fossil	[kg CO2 eq.]	4.83E+01	6.53E-01	9.54E-05	0	6.49E-01	2.13E00	5.70E-03	-9.98E01
Climate Change, biogenic	[kg CO2 eq.]	6.02E-02	3.57E-04	1.03E00	0	3.54E-04	5.93E00	1.61E-02	5.68E-02
Climate Change, land use and land use change	[kg CO2 eq.]	0	3.41E-05	-1.49E-04	0	3.39E-05	1.06E-03	2.84E-06	-1.61E-01
Ozone depletion	[kg CFC-11 eq.]	0	5.38E-17	-1.29E-16	0	5.34E-17	8.04E-15	2.16E-17	-3.10E-13
Acidification	[Mole of H+ eq.]	0	5.55E-03	-6.86E-04	0	5.51E-03	1.58E-02	4.24E-05	-1.19E00
Eutrophication, freshwater	[kg P eq.]	0	1.38E-07	1.18E-05	0	1.38E-07	1.56E-05	2.72E-08	-7.12E-05
Eutrophication, marine	[kg N eq.]	0	2.55E-03	8.27E-05	0	2.53E-03	4.16E-03	1.12E-05	-1.32E-01
Eutrophication, terrestrial	[Mole of N eq.]	0	2.79E-02	1.51E-04	0	2.78E-02	4.54E-02	1.22E-04	-1.45E00
Photochemical ozone formation, human health	[kg NMVOC eq.]	3.22E-05	4.86E-03	3.17E-04	0	4.83E-03	1.44E-02	3.87E-05	-4.05E-01
Resource use, mineral and metals	[kg Sb eq.]	8.99E+00	8.64E-09	-1.03E-09	0	8.59E-09	1.60E-07	4.28E-10	-6.42E-06
Resource use, fossils	[MJ]	4.47E+03	8.68E00	3.06E-01	0	8.62E00	2.74E01	7.29E-02	-1.01E03
Water use	[m³ world equiv.]	3.67E-08	1.98E-03	-7.54E-03	0	1.96E-03	2.14E-01	5.83E-04	-8.86E00

Table 30 Resource Use Indicators of Model 8

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	4.86E+02	2.83E-02	-8.85E-02	0	2.81E-02	3.24E00	8.70E-03	-1.46E+02
Total use of renewable primary energy resources (PERT)	[MJ]	4.86E+02	2.83E-02	-8.85E-02	0	2.81E-02	3.24E00	8.70E-03	-1.46E+02
Use of non-renewable primary energy (PENRE)	[MJ]	4.89E+03	8.68E00	3.06E-01	0	8.62E00	2.74E+01	7.29E-02	-1.01E+03
Total use of non-renewable primary energy resources (PENRT)	[MJ]	4.89E+03	8.68E00	3.06E-01	0	8.62E00	2.74E+01	7.29E-02	-1.01E+03
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	9.98E-01	6.81E-05	-2.39E-04	0	6.77E-05	6.16E-03	1.67E-05	-3.11E-01

Table 31 Waste Categories and Other Indicators of Model 8

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	9.78E-07	4.01E-11	-9.20E-11	0	3.98E-11	2.79E-09	7.43E-12	-1.87E-07
Non-hazardous waste disposed (NHWD)	kg	6.37E+01	1.56E-04	9.96E-01	0	1.55E-04	1.32E+02	3.58E-01	-1.90E+01
Radioactive waste disposed (RWD)	kg	6.76E-02	1.88E-06	-4.14E-06	0	1.87E-06	2.47E-04	6.63E-07	-9.09E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	0	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	4.81E-05	3.66E-08	-1.40E-08	0	3.64E-08	1.93E-07	5.20E-10	-1.95E-05
Ionising radiation, human health	kBq U235 eq.	9.67E+00	1.76E-04	-3.91E-04	0	1.75E-04	2.27E-02	6.08E-05	-8.49E-01
Ecotoxicity, freshwater	CTUe	4.62E+03	3.40E00	9.42E-01	0	3.38E00	4.45E01	1.19E-01	-1.86E+02
Human toxicity, cancer	CTUh	4.76E-08	5.87E-11	3.61E-11	0	5.83E-11	2.23E-09	5.98E-12	-1.35E-08
Human toxicity, non-cancer	CTUh	3.40E-06	2.78E-09	3.98E-09	0	2.77E-09	2.53E-07	6.83E-10	-7.90E-07
Land Use	Pt	7.14E+02	3.75E-02	-1.42E-01	0	3.73E-02	3.40E00	9.13E-03	-2.03E02

4.8.9 Partition System Model 9: The table below shows the LCIs, LCIA Resource use, Waste categories, optional indicators for Magic Wall (Double Glazed).

Table 32 LCIA and LCI Result for Partition System Model 9

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	7.83E+02	1.30E00	1.03E00	0	1.29E00	1.62E01	4.28E-02	-1.98E02
Climate Change, fossil	[kg CO2 eq.]	7.82E+02	1.30E00	9.52E-05	0	1.29E00	4.26E00	1.12E-02	-1.97E02
Climate Change, biogenic	[kg CO2 eq.]	2.12E-01	7.08E-04	1.03E00	0	7.06E-04	1.19E01	3.16E-02	1.12E-01
Climate Change, land use and land use change	[kg CO2 eq.]	7.11E-01	6.78E-05	-1.49E-04	0	6.76E-05	2.12E-03	5.59E-06	-3.18E-01
Ozone depletion	[kg CFC-11 eq.]	7.75E-12	1.07E-16	-1.29E-16	0	1.06E-16	1.61E-14	4.25E-17	-6.14E-13
Acidification	[Mole of H+ eq.]	7.71E+00	1.10E-02	-6.84E-04	0	1.10E-02	3.16E-02	8.34E-05	-2.35E00
Eutrophication, freshwater	[kg P eq.]	6.44E-04	2.75E-07	1.18E-05	0	2.74E-07	2.57E-05	5.35E-08	-1.41E-04
Eutrophication, marine	[kg N eq.]	1.28E+00	5.05E-03	8.26E-05	0	5.04E-03	8.32E-03	2.20E-05	-2.61E-01
Eutrophication, terrestrial	[Mole of N eq.]	1.44E+01	5.54E-02	1.51E-04	0	5.53E-02	9.09E-02	2.40E-04	-2.87E00
Photochemical ozone formation, human health	[kg NMVOC eq.]	3.10E+00	9.65E-03	3.17E-04	0	9.62E-03	2.88E-02	7.62E-05	-8.01E-01
Resource use, mineral and metals	[kg Sb eq.]	4.76E-05	1.71E-08	-1.02E-09	0	1.71E-08	3.19E-07	8.43E-10	-1.22E-05
Resource use, fossils	[MJ]	9.38E+03	1.72E+01	3.06E-01	0	1.72E+01	5.45E+01	1.43E-01	-2.00E+03
Water use	[m³ world equiv.]	5.54E+01	3.92E-03	-7.53E-03	0	3.91E-03	4.31E-01	1.15E-03	-1.75E01

Table 33 Resource Use Indicators for Partition System Model 9

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	8.92E+02	5.62E-02	-8.84E-02	0	5.60E-02	6.48E00	1.71E-02	-2.89E+02
Total use of renewable primary energy resources (PERT)	[MJ]	8.92E+02	5.62E-02	-8.84E-02	0	5.60E-02	6.48E00	1.71E-02	-2.89E+02
Use of non-renewable primary energy (PENRE)	[MJ]	9.38E+03	1.72E+01	3.05E-01	0	1.72E+01	5.45E+01	1.44E-01	-2.00E+03
Total use of non-renewable primary energy resources (PENRT)	[MJ]	9.38E+03	1.72E+01	3.05E-01	0	1.72E+01	5.45E+01	1.44E-01	-2.00E+03
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	1.88E+00	1.35E-04	-2.39E-04	0	1.35E-04	1.24E-02	3.29E-05	-6.15E-01

Table 34 Waste Categories and Other Indicators of Model 9

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	1.74E-06	7.95E-11	-9.18E-11	0	7.92E-11	5.55E-09	1.46E-11	-3.70E-07
Non-hazardous waste disposed (NHWD)	kg	1.22E+02	3.10E-04	9.94E-01	0	3.09E-04	2.66E02	7.04E-01	-3.76E01
Radioactive waste disposed (RWD)	kg	1.32E-01	3.74E-06	-4.13E-06	0	3.73E-06	4.94E-04	1.30E-06	-1.80E-02
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	9.04E-05	7.27E-08	-1.40E-08	0	7.25E-08	3.87E-07	1.02E-09	-3.86E-05
Ionising radiation, human health	kBq U235 eq.	1.90E+01	3.50E-04	-3.90E-04	0	3.49E-04	4.53E-02	1.20E-04	-1.68E00
Ecotoxicity, freshwater	CTUe	9.14E+03	6.76E00	9.40E-01	0	6.74E00	8.89E01	2.35E-01	-3.68E02
Human toxicity, cancer	CTUh	9.00E-08	1.16E-10	3.61E-11	0	1.16E-10	4.46E-09	1.18E-11	-2.66E-08
Human toxicity, non-cancer	CTUh	6.50E-06	5.52E-09	3.97E-09	0	5.51E-09	5.08E-07	1.34E-09	-1.56E-06
Land Use	Pt	1.16E+03	7.45E-02	-1.42E-01	0	7.42E-02	6.80E00	1.80E-02	-4.00E02

**4.8.10 Partition System Model 10:** The table below shows the LCIs, LCIA Resource use, Waste categories, optional indicators for Slimo wall (Single Glazed).

Table 35 LCIA and LCI Result for Partition System Model 10

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	5.75E+02	6.84E-01	1.03E+00	6.80E-01	8.10E+00	4.28E-02	-1.98E+02	5.75E+02
Climate Change, fossil	[kg CO2 eq.]	5.74E+02	6.83E-01	9.52E-05	6.80E-01	2.14E+00	1.12E-02	-1.97E+02	5.74E+02
Climate Change, biogenic	[kg CO2 eq.]	-2.80E-01	3.73E-04	1.03E+00	3.71E-04	5.95E+00	3.16E-02	1.12E-01	-2.80E-01
Climate Change, land use and land use change	[kg CO2 eq.]	6.50E-01	3.57E-05	-1.49E-04	3.55E-05	1.07E-03	5.59E-06	-3.18E-01	6.50E-01
Ozone depletion	[kg CFC-11 eq.]	7.28E-12	5.63E-17	-1.29E-16	5.60E-17	8.08E-15	4.25E-17	-6.14E-13	7.28E-12
Acidification	[Mole of H+ eq.]	6.02E+00	5.80E-03	-6.84E-04	5.77E-03	1.58E-02	8.34E-05	-2.35E+00	6.02E+00
Eutrophication, freshwater	[kg P eq.]	4.70E-04	1.45E-07	1.18E-05	1.44E-07	1.56E-05	5.35E-08	-1.41E-04	4.70E-04
Eutrophication, marine	[kg N eq.]	8.82E-01	2.66E-03	8.26E-05	2.65E-03	4.17E-03	2.20E-05	-2.61E-01	8.82E-01
Eutrophication, terrestrial	[Mole of N eq.]	9.87E+00	2.92E-02	1.51E-04	2.91E-02	4.56E-02	2.40E-04	-2.87E+00	9.87E+00
Photochemical ozone formation, human health	[kg NMVOC eq.]	2.29E+00	5.09E-03	3.17E-04	5.06E-03	1.44E-02	7.62E-05	-8.01E-01	2.29E+00
Resource use, mineral and metals	[kg Sb eq.]	3.50E-05	9.04E-09	-1.02E-09	8.99E-09	1.61E-07	8.43E-10	-1.22E-05	3.50E-05
Resource use, fossils	[MJ]	6.58E+03	9.08E+00	3.06E-01	9.03E+00	2.75E+01	1.43E-01	-2.00E+03	6.58E+03
Water use	[m³ world equiv.]	4.38E+01	2.07E-03	-7.53E-03	2.06E-03	2.15E-01	1.15E-03	-1.75E+01	4.38E+01



Table 36 Resource Use Indicators for Partition System Model 10

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	7.28E+02	2.96E-02	-8.84E-02	0	2.95E-02	3.25E00	1.71E-02	-2.89E+02
Total use of renewable primary energy resources (PERT)	[MJ]	7.28E+02	2.96E-02	-8.84E-02	0	2.95E-02	3.25E00	1.71E-02	-2.89E+02
Use of non-renewable primary energy (PENRE)	[MJ]	6.58E+03	9.08E00	3.05E-01	0	9.03E00	2.75E+01	1.44E-01	-2.00E+03
Total use of non-renewable primary energy resources (PENRT)	[MJ]	6.58E+03	9.08E00	3.05E-01	0	9.03E00	2.75E+01	1.44E-01	-2.00E+03
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	1.51E+00	7.12E-05	-2.39E-04	0	7.08E-05	6.19E-03	3.29E-05	-6.15E-01

Table 37 Waste Categories and other indicators for Partition System Model 10

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	1.29E-06	4.19E-11	-9.18E-11	0	4.17E-11	2.80E-09	1.46E-11	-3.70E-07
Non-hazardous waste disposed (NHWD)	kg	9.53E+01	1.64E-04	9.94E-01	0	1.63E-04	1.33E02	7.04E-01	-3.76E01
Radioactive waste disposed (RWD)	kg	8.27E-02	1.97E-06	-4.13E-06	0	1.96E-06	2.48E-04	1.30E-06	-1.80E-02
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	8.07E-05	3.83E-08	-1.40E-08	0	3.81E-08	1.94E-07	1.02E-09	-3.86E-05
Ionising radiation, human health	kBq U235 eq.	1.11E+01	1.85E-04	-3.90E-04	0	1.84E-04	2.28E-02	1.20E-04	-1.68E00
Ecotoxicity, freshwater	CTUe	4.93E+03	3.56E00	9.40E-01	0	3.54E00	4.47E01	2.35E-01	-3.68E02
Human toxicity, cancer	CTUh	6.99E-08	6.14E-11	3.61E-11	0	6.10E-11	2.24E-09	1.18E-11	-2.66E-08
Human toxicity, non-cancer	CTUh	4.73E-06	2.91E-09	3.97E-09	0	2.90E-09	2.55E-07	1.34E-09	-1.56E-06
Land Use	Pt	1.03E+03	3.92E-02	-1.42E-01	0	3.90E-02	3.41E00	1.80E-02	-4.00E02

4.8.11 **Partition System Model 11:** The table below shows the LCIs, LCIA Resource use, Waste categories, optional indicators for ULTRALINE 45 (Single Glazed) Model 11 configuration.

Table 38 LCIA and LCI Result for Partition System Model 11

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO2 eq.]	3.26E+02	6.38E-01	1.03E00	0	6.34E-01	8.10E00	1.26E-02	-5.76E01
Climate Change, fossil	[kg CO2 eq.]	3.26E+02	6.37E-01	9.52E-05	0	6.34E-01	2.14E00	3.30E-03	-5.75E01
Climate Change, biogenic	[kg CO2 eq.]	-3.77E-01	3.48E-04	1.03E00	0	3.46E-04	5.96E00	9.31E-03	3.28E-02
Climate Change, land use and land use change	[kg CO2 eq.]	2.49E-01	3.33E-05	-1.49E-04	0	3.31E-05	1.07E-03	1.65E-06	-9.27E-02
Ozone depletion	[kg CFC-11 eq.]	6.56E-12	5.25E-17	-1.29E-16	0	5.22E-17	8.08E-15	1.25E-17	-1.79E-13
Acidification	[Mole of H+ eq.]	3.06E+00	5.41E-03	-6.84E-04	0	5.38E-03	1.58E-02	2.46E-05	-6.85E-01
Eutrophication, freshwater	[kg P eq.]	2.91E-04	1.35E-07	1.18E-05	0	1.34E-07	1.56E-05	1.57E-08	-4.11E-05
Eutrophication, marine	[kg N eq.]	5.52E-01	2.48E-03	8.26E-05	0	2.47E-03	4.18E-03	6.48E-06	-7.61E-02
Eutrophication, terrestrial	[Mole of N eq.]	6.24E+00	2.73E-02	1.51E-04	0	2.71E-02	4.56E-02	7.08E-05	-8.35E-01
Photochemical ozone formation, human health	[kg NMVOC eq.]	1.28E+00	4.74E-03	3.17E-04	0	4.72E-03	1.45E-02	2.24E-05	-2.33E-01
Resource use, mineral and metals	[kg Sb eq.]	2.08E-05	8.43E-09	-1.02E-09	0	8.39E-09	1.61E-07	2.48E-10	-3.93E-06
Resource use, fossils	[MJ]	4.06E+03	8.47E00	3.06E-01	0	8.42E00	2.75E01	4.23E-02	-5.83E02
Water use	[m³ world equiv.]	2.19E+01	1.93E-03	-7.53E-03	0	1.92E-03	2.15E-01	3.38E-04	-5.11E00

Table 39 Resource Use Indicators Result for Partition System Model 11

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	3.67E+02	2.76E-02	-8.84E-02	0	2.75E-02	3.25E00	5.04E-03	-8.42E+01
Total use of renewable primary energy resources (PERT)	[MJ]	3.67E+02	2.76E-02	-8.84E-02	0	2.75E-02	3.25E00	5.04E-03	-8.42E+01
Use of non-renewable primary energy (PENRE)	[MJ]	4.06E+03	8.47E00	3.05E-01	0	8.42E00	2.75E+01	4.23E-02	-5.83E+02
Total use of non-renewable primary energy resources (PENRT)	[MJ]	4.06E+03	8.47E00	3.05E-01	0	8.42E00	2.75E+01	4.23E-02	-5.83E+02
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	7.40E-01	6.64E-05	-2.39E-04	0	6.61E-05	6.19E-03	9.68E-06	-1.79E-01

Table 40 Waste Categories and Other Indicators Result for Partition System Model 11

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	8.25E-07	3.91E-11	-9.18E-11	0	3.89E-11	2.80E-09	4.31E-12	-1.08E-07
Non-hazardous waste disposed (NHWD)	kg	4.83E+01	1.53E-04	9.94E-01	0	1.52E-04	1.33E+02	2.07E-01	-1.10E+01
Radioactive waste disposed (RWD)	kg	6.01E-02	1.84E-06	-4.13E-06	0	1.83E-06	2.48E-04	3.84E-07	-5.24E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	kg	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	kg	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	MJ	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	3.22E-05	3.58E-08	-1.40E-08	0	3.56E-08	1.94E-07	3.01E-10	-1.12E-05
Ionising radiation, human health	kBq U235 eq.	8.97E+00	1.72E-04	-3.90E-04	0	1.71E-04	2.28E-02	3.53E-05	-4.89E-01
Ecotoxicity, freshwater	CTUe	4.46E+03	3.32E00	9.40E-01	0	3.30E00	4.47E+01	6.92E-02	-1.07E+02
Human toxicity, cancer	CTUh	3.65E-08	5.72E-11	3.61E-11	0	5.69E-11	2.24E-09	3.47E-12	-7.78E-09
Human toxicity, non-cancer	CTUh	2.76E-06	2.72E-09	3.97E-09	0	2.70E-09	2.55E-07	3.96E-10	-4.55E-07
Land Use	Pt	5.58E+02	3.66E-02	-1.42E-01	0	3.64E-02	3.41E00	5.29E-03	-1.17E+02

**4.8.12 Partition System Model 12:** The table below shows the LCIs, LCIA Resource use, Waste categories, optional indicators for FINESSE 100 Model 12 configuration.

Table 41 LCIA and LCI Result for Partition System Model 12

Environmental Impact Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate Change - total	[kg CO <sub>2</sub> eq.]	1.04E+03	8.84E-01	1.03E00	0	8.82E-01	9.75E00	4.67E-03	-1.86E01
Climate Change, fossil	[kg CO <sub>2</sub> eq.]	1.04E+03	8.83E-01	9.54E-05	0	8.81E-01	2.79E00	1.22E-03	-1.85E01
Climate Change, biogenic	[kg CO <sub>2</sub> eq.]	3.15E-02	4.82E-04	1.03E00	0	4.81E-04	6.96E00	3.45E-03	1.09E-02
Climate Change, land use and land use change	[kg CO <sub>2</sub> eq.]	1.34E+00	4.62E-05	-1.49E-04	0	4.61E-05	1.36E-03	6.10E-07	-3.02E-02
Ozone depletion	[kg CFC-11 eq.]	8.68E-12	7.27E-17	-1.29E-16	0	7.26E-17	1.01E-14	4.64E-18	-5.79E-14
Acidification	[Mole of H <sup>+</sup> eq.]	1.13E+01	7.50E-03	-6.86E-04	0	7.49E-03	1.97E-02	9.10E-06	-2.22E-01
Eutrophication, freshwater	[kg P eq.]	8.57E-04	1.87E-07	1.18E-05	0	1.87E-07	6.93E-05	5.83E-09	-1.33E-05
Eutrophication, marine	[kg N eq.]	1.51E+00	3.44E-03	8.27E-05	0	3.44E-03	5.18E-03	2.40E-06	-2.47E-02
Eutrophication, terrestrial	[Mole of N eq.]	1.68E+01	3.78E-02	1.51E-04	0	3.77E-02	5.66E-02	2.62E-05	-2.71E-01
Photochemical ozone formation, human health	[kg NMVOC eq.]	4.13E+00	6.57E-03	3.17E-04	0	6.56E-03	1.78E-02	8.31E-06	-7.55E-02
Resource use, mineral and metals	[kg Sb eq.]	6.62E-05	1.17E-08	-1.03E-09	0	1.17E-08	2.04E-07	9.20E-11	-2.61E-06
Resource use, fossils	[MJ]	1.16E+04	1.17E01	3.06E-01	0	1.17E01	3.62E01	1.57E-02	-1.88E02
Water use	[m <sup>3</sup> world equiv.]	8.23E+01	2.67E-03	-7.54E-03	0	2.67E-03	2.45E-01	1.25E-04	-1.64E00

Table 42 Resource use indicators for Partition System model 12

Resource use indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	1.39E+03	3.83E-02	-8.85E-02	0	3.82E-02	4.06E00	1.87E-03	-2.76E+01
Total use of renewable primary energy resources (PERT)	[MJ]	1.39E+03	3.83E-02	-8.85E-02	0	3.82E-02	4.06E00	1.87E-03	-2.76E+01
Use of non-renewable primary energy (PENRE)	[MJ]	1.16E+04	1.17E+01	3.06E-01	0	1.17E+01	3.62E+01	1.57E-02	-1.88E+02
Total use of non-renewable primary energy resources (PENRT)	[MJ]	1.16E+04	1.17E+01	3.06E-01	0	1.17E+01	3.62E+01	1.57E-02	-1.88E+02
Input of secondary material (SM)	[kg]	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (R SF)	[MJ]	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF)	[MJ]	0	0	0	0	0	0	0	0
Use of net fresh water (FW)	[m3]	2.94E+00	9.20E-05	-2.39E-04	0	9.19E-05	7.23E-03	3.58E-06	-5.81E-02



Table 43 Waste categories and other indicators of Partition System model 12

Output flows and waste categories	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	2.21E-06	5.41E-11	-9.20E-11	0	5.41E-11	3.67E-09	1.60E-12	-3.54E-08
Non-hazardous waste disposed (NHWD)	kg	1.78E+02	2.11E-04	9.96E-01	0	2.11E-04	1.59E02	7.68E-02	-3.57E00
Radioactive waste disposed (RWD)	kg	1.33E-01	2.55E-06	-4.14E-06	0	2.54E-06	3.10E-04	1.42E-07	-1.71E-03
Components for re-use (CRU)	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR)	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER)	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE)	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET)	0	0	0	0	0	0	0	0	0
Other Indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Disease incidences	1.63E-04	4.95E-08	-1.40E-08	0	4.95E-08	2.41E-07	1.12E-10	-3.64E-06
Ionising radiation, human health	kBq U235 eq.	1.63E+01	2.39E-04	-3.90E-04	0	2.38E-04	2.85E-02	1.31E-05	-1.64E-01
Ecotoxicity, freshwater	CTUe	6.60E+03	4.60E00	9.41E-01	0	4.59E00	5.58E01	2.56E-02	-3.51E01
Human toxicity, cancer	CTUh	1.33E-07	7.93E-11	3.61E-11	0	7.92E-11	2.77E-09	1.28E-12	-2.65E-09
Human toxicity, non-cancer	CTUh	8.56E-06	3.76E-09	3.98E-09	0	3.76E-09	3.09E-07	1.47E-10	-1.45E-07
Land Use	Pt	1.87E+03	5.07E-02	-1.42E-01	0	5.06E-02	4.24E00	1.96E-03	-3.80E01

#### 4.9 Interpretation

The interpretation of the results for Office Partition system Model 1 is below:

**Global Warming Potential (GWP):** The GWP fossil is 327 kg CO<sub>2</sub> eq., GWP biogenic is 0.54 CO<sub>2</sub> eq. and GWP land use change is 0.256 kg CO<sub>2</sub> eq. with major contribution from A1-A3 (323.58 kg CO<sub>2</sub> eq.), A4 (0.639 kg CO<sub>2</sub> eq.), A5 (1.03 kg CO<sub>2</sub> eq.), C2 (0.635 kg CO<sub>2</sub> eq.), C3 (8.11 kg CO<sub>2</sub> eq.), and D (-57.31 kg CO<sub>2</sub> eq.). Considering overall impact as 100%, A1-A3 stage (product stage) contributes the highest (~80%, majorly from raw material supply)

**Acidification Potential:** The Acidification Potential is from A1-A3 (3.0299 Mole of H<sup>+</sup> eq.), A4-A5 (4.74E-03 Mole of H<sup>+</sup> eq.), C2-C4 (2.13E-02 Mole of H<sup>+</sup> eq.) and D (-0.68 Mole of H<sup>+</sup> eq.). Considering overall impacts as 100%, A1-A3 stage (product stage) contributes the highest (~80%, majorly from raw material supply).

**Eutrophication freshwater:** The Eutrophication freshwater is from A1-A3 (2.90E-04 kg P eq.), A4-A5 (1.19E-05 kg P eq.), C2-C4 (1.58E-05 kg P eq.), and D (-4.09E-05 kg P eq.) Considering overall impacts as 100%, A1-A3 stage (product stage) contributes the highest (~80%, majorly from raw material supply)

**Eutrophication terrestrial:** The Eutrophication terrestrial is from A1-A3 (6.21 Mole of N eq.), A4-A5 (2.75E-02 Mole of N eq.), C2-C4 (7.29E-02 Mole of N eq.) and D (-0.831 Mole of N eq.). Considering over all impacts as 100%, A1-A3 stage (product stage) contributes the highest (~80%, majorly from raw material supply).

**Eutrophication marine:** The Eutrophication marine is from A1-A3 (5.49E-01 kg N eq.), A4-A5 (2.57E-03 kg N eq.), C2-C4 (6.66E-03 kg N eq.), D (-7.57E-02 kg N eq.). Considering overall impacts as 100%, A1-A3 stage (product stage) contributes the highest (~80%, majorly from raw material supply).

**Photochemical ozone formation (POCP):** The POCP is from A1-A3 (1.27 kg NMVOC eq.), A4-A5 (5.07E-03 kg NMVOC eq.), C2-C4 (1.92E-02 kg NMVOC eq.) and D (-0.232 kg NMVOC eq.). Considering overall impacts as 100%, A1-A3 stage (product stage) contributes the highest (~99%, majorly from raw material supply).

**Resource use, minerals and metals:** The Resource use, minerals and metals is from A1-A3 (2.06E-05 kg Sb eq.), A4-A5 (7.42E-09 kg Sb eq.), C2-C4 (1.69E-07 kg Sb eq.) and D (-3.91E-06 kg Sb eq.). Considering overall impacts as 100%, A1-A3 stage (product stage) contributes the highest (~98%, majorly from raw material supply).

**Resource use Fossil fuels:** The Resource use – Fossil fuels is from A1-A3 (4.03E+03 MJ), A4-A5 (8.80 MJ), C2-C4 (36 MJ) and D (-54.81E+02). Considering overall impacts as 100%, A1-A3 stage (product stage) contributes the highest (~98%, majorly from raw material supply).

**Water Use:** The Water use is from A1-A3 (2.17E+01 m<sup>3</sup> world eq.), A4-A5 (-5.61E-03 m<sup>3</sup> world eq.), C2-C4 (2.18E-01 m<sup>3</sup> world eq.) and D (-5.08 m<sup>3</sup> world eq.). Considering overall impacts as 100%, A1-A3 stage (product stage) contributes the highest (~98%, majorly from raw material supply).

#### Other Environmental Information

The constituent materials used within our products are responsibly sourced and we apply the principles of Sustainable Development and of Environmental Stewardship as a standard business practice in our operations. Protecting the environment by preserving non-renewable natural resources, increasing energy efficiency, reducing the environmental emissions, limiting the impact of materials transportation to and from our operations is part of our way in doing business.

Products do not contain any substances that can be included in “Candidate List of Substances of Very High Concern for Authorization” and raw materials used are not part of the EU REACH regulation.

## 5 References

- GaBi 10\_2021: Dokumentation der GaBi-Datensätze der Datenbank zur Ganzheitlichen Bilanzierung. LBP, Universität Stuttgart und Sphera Solutions GmbH
- GaBi 10\_2021: Software und Datenbank zur Ganzheitlichen Bilanzierung. LBP, Universität Stuttgart und Sphera Solutions GmbH
- ISO 14020:2000 Environmental labels and declarations - General principles
- ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- ISO 14040:2006 Environmental management- Life cycle assessment - Principles and framework
- ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
- PCR 2019:14, Product Category Rules (PCR) for 'CONSTRUCTION PRODUCT' Version 1.11

